Franconia 24497
Lafayette Brook Bridge
Public Informational Meeting

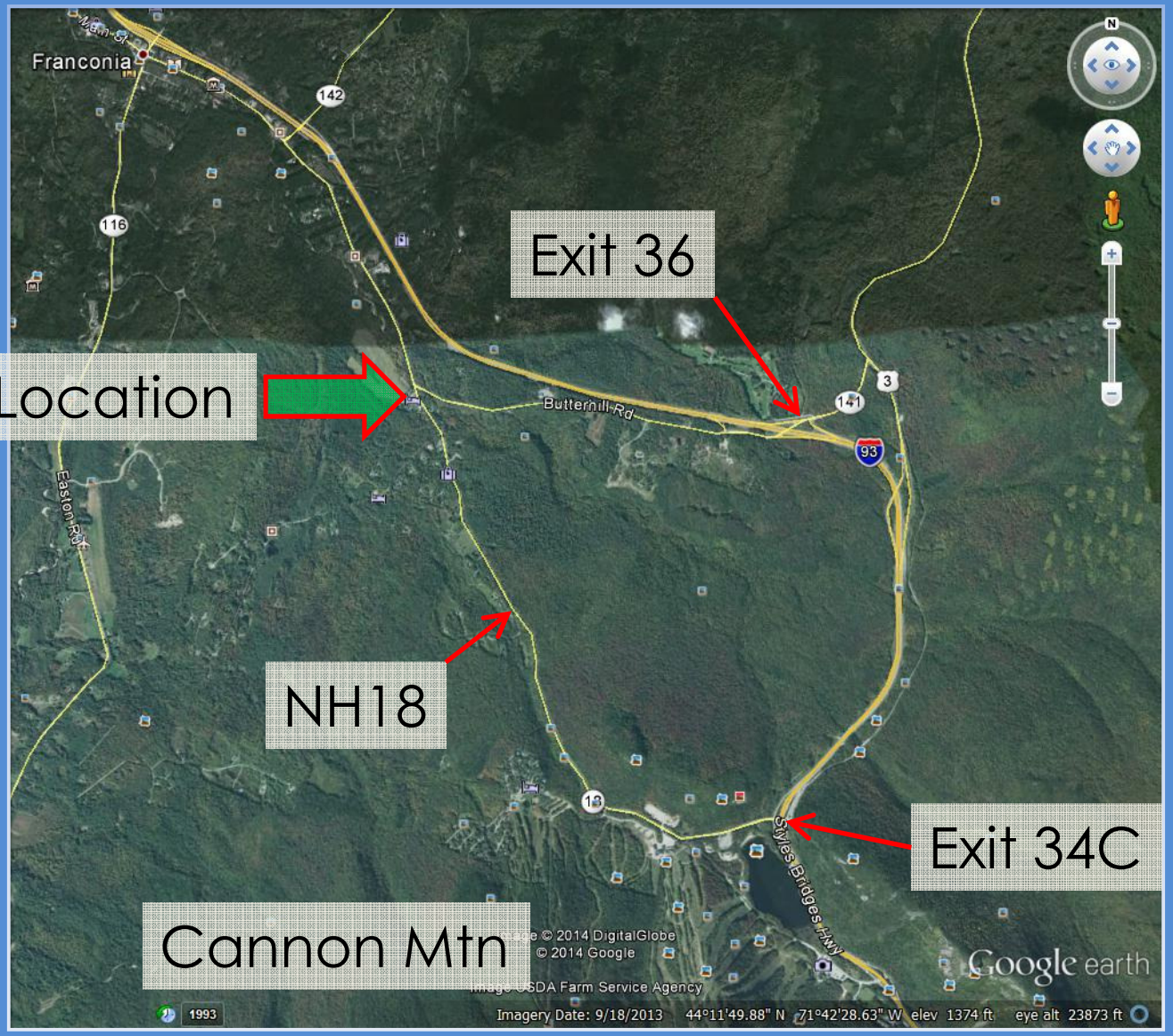
NH 18 over Lafayette Brook
April 29, 2015

New Hampshire DOT VHB

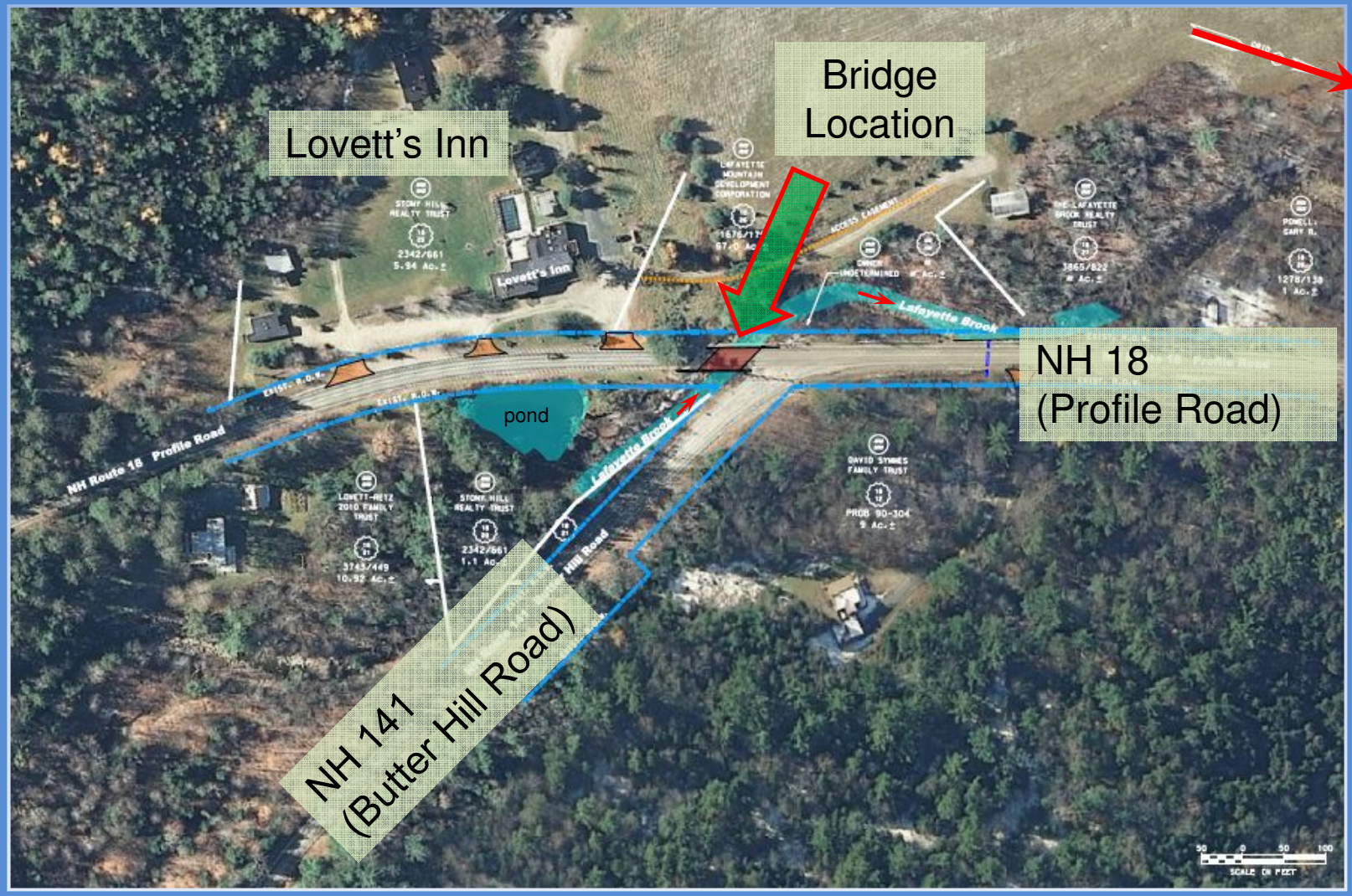
Meeting Agenda

- Welcome & Introductions
- Tonight's Presentation
  - Recap
  - Project Update
  - Alternatives Considered
  - Preferred Alternative
  - Next Steps

Project Location



Project Location



Site Photos

Upstream Elevation

Site Photos

Lovett's Inn

South Approach and Adjacent Pond

View of Bridge from the Inn

Site Photos

Upstream Looking North
NH 141 (Butter Hill Road) in Background

Site Photos

Looking South from Intersection with NH 141 (Butter Hill Road)

Downstream Elevation Looking North

About the Bridge

- Concrete T-Beam Bridge Built in 1932
- Eligible for Historic Registry
- 52 foot Single Span over Lafayette Brook
- Bridge Width is 24 feet Between Curbs (Approach Roadway Similar)
- Bridge is on State's Red List (since 2010)
- 2014 Bridge Priority Number #78
- Carries Approximately 640 Vehicles per Day

First Public Meeting - August 14, 2014

Presented Results of Recent Bridge Inspections

Upstream Exterior T-Beam Cracks and Leaking

First Public Meeting

- Explained that the existing bridge superstructure had reached the end of its service life and must be replaced, however …

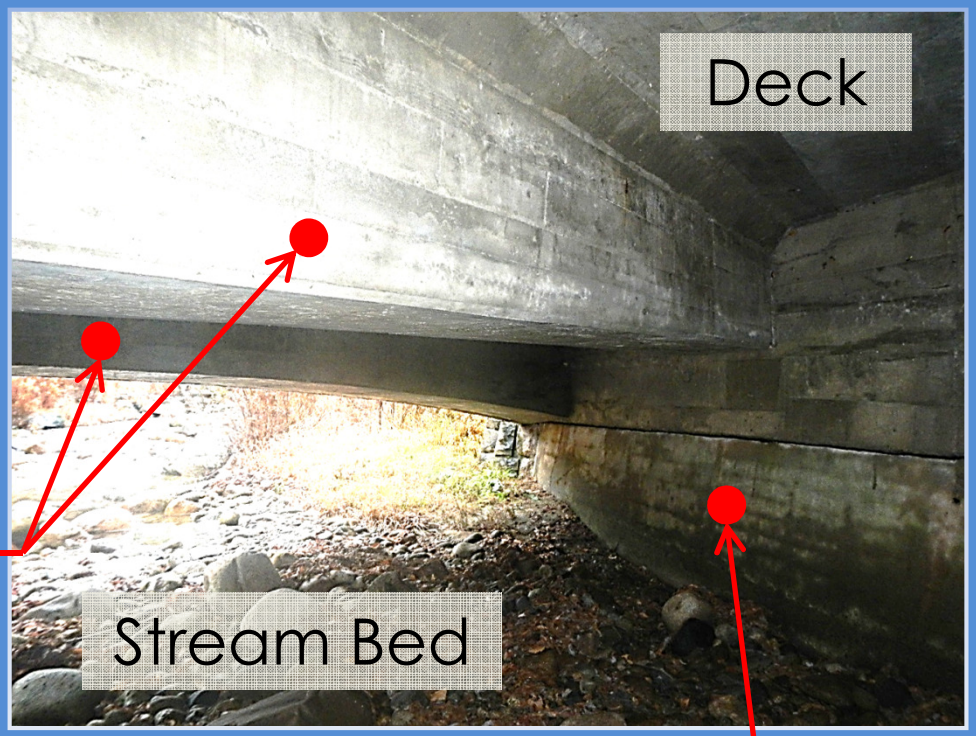
Downstream Exterior T-Beam
Spalling and Leaking

Poor Quality Concrete Cores

Intact Core

First Public Meeting

- The abutments and wingwalls were in good condition and could be rehabilitated



First Public Meeting

Discussed Other Project Considerations Such As Bridge Width and Railing, and…

24 foot Wide Roadway – Between Curbs
Substandard Bridge Railing, No Approach Railing

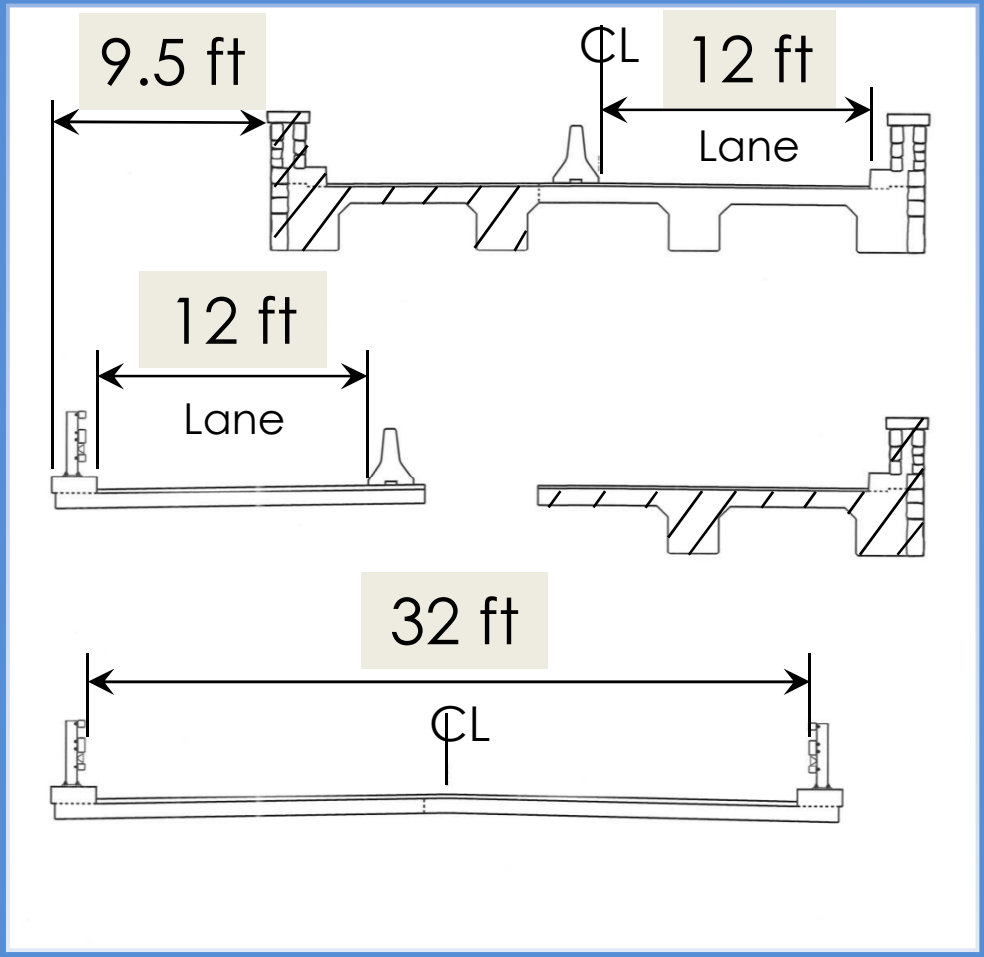
First Public Meeting

Intersection Sightlines

Looking South from Intersection
with NH 141 (Butter Hill Road)

First Public Meeting

Discussed Traffic Control – Recommended Bridge Closure and Traffic Detour Due to Narrow Bridge Width



Maintaining One Lane of Traffic Requires 6.5 foot Shift in Roadway Centerline

First Public Meeting

Received Public Input

- Strong desire to maintain the aesthetic appearance of the bridge. Especially concerned about the look of the proposed bridge railing
- Received input that the intersection with NH 141 (Butter Hill Road) did not present any concerns and …
- The bridge width of 24 feet was not seen as a concern

Project Update

Since the August 14th Public Meeting

Evaluated Alternatives

- Alternatives for addressing the deficient bridge have been evaluated and will be presented tonight along with …
- Preliminary details of the Preferred Alternative

Alternatives Evaluated for Addressing the Deficient Bridge

Evaluated the Following Alternatives:

- Bridge Rehabilitation
- Bridge Rehabilitation & Widening
- Complete Bridge Replacement

Alternatives Evaluated

Bridge Rehabilitation:

- Replace superstructure and stone-faced railing
- Retain some elements of the existing bridge such as: railing cap stones, stone-faced pilasters, abutments and lower portions of wingwalls
- Bridge footprint is unchanged – bridge roadway width remains at 24 feet between curbs
- Estimated to cost $1.13 Million

Alternatives Evaluated

Bridge Rehabilitation & Widening:

- Replace superstructure and stone-faced railing with a wider superstructure of 32 feet between curbs (to provide 5-foot shoulders)
- Widen to west (towards Lovett's Inn) to avoid impacts to the pond and intersection with NH 141- includes removal of trees adjacent to Inn
- Construct new bridge foundations in areas of widening
- Estimated to cost $1.94 Million

Alternatives Evaluated

Complete Bridge Replacement:

- Replace bridge with a wider structure of 32 feet between curbs (to provide 5-foot shoulders)
- Widen to west (towards Lovett's Inn) to avoid impacts to the pond and intersection with NH 141 - includes removal of trees adjacent to Inn
- Estimated to cost $2.24 Million

Preferred Alternative is Bridge Rehabilitation

- Meets project need by addressing the deficient bridge
- Replaces the deficient bridge superstructure while retaining the bridge width of 24 feet between curbs *(Bridge width is narrow, but adequate, considering existing approach roadway width, low traffic volume, setting and lack of accident history)*
- Upgrades existing substandard bridge parapet railing and provides proper approach railing transitions

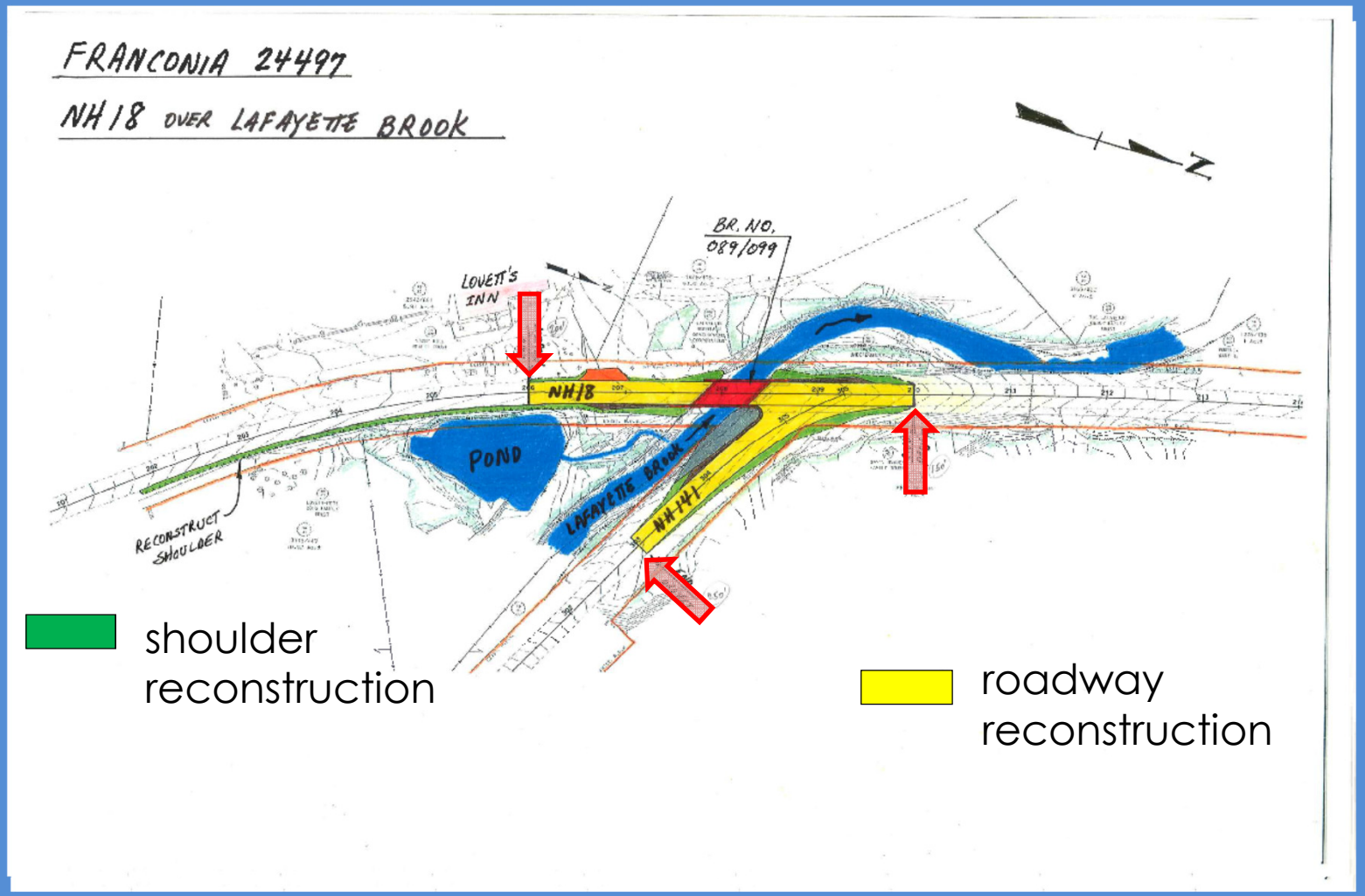
Preferred Alternative

- Retains some aesthetic elements of the existing structure where practical – railing cap stones, stone-faced pilasters, and lower portions of wingwalls
- Avoids time consuming foundation work by reusing existing abutments and wingwalls which are in good condition
- Makes use of precast concrete components to minimize construction duration

Preferred Alternative

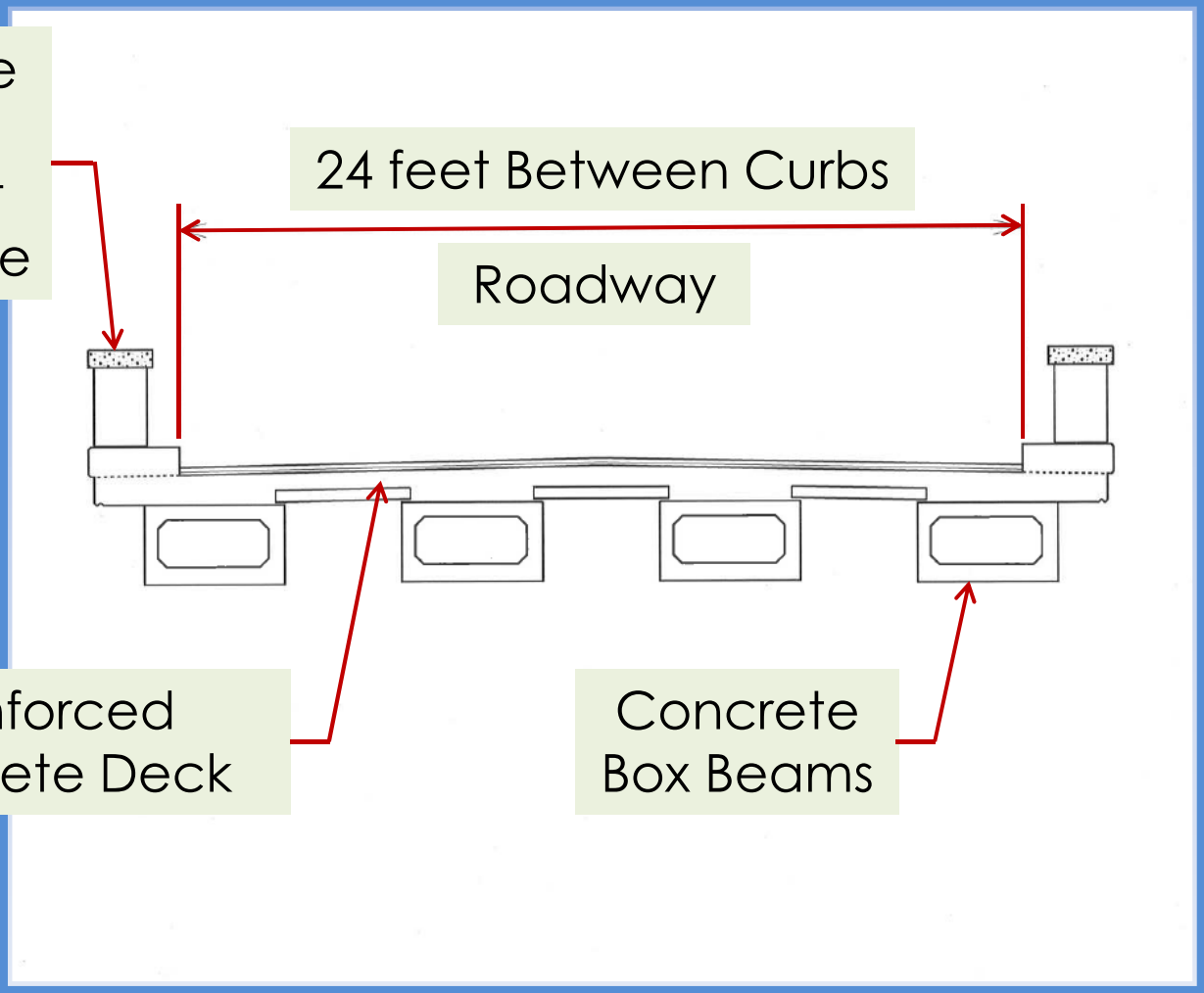
- Improves the current hydraulic opening – by utilizing constant depth concrete box beams
- Makes minor improvements to sightlines at intersection with NH 141 (utility pole relocations, clear vegetation)
- Includes limited approach roadway work consisting of subbase reconstruction and drainage upgrades (on NH 18 approximately 200 feet south of bridge, 150 feet north; 250 feet on NH 141) and installing stone rip rap stream bank protection as needed near the bridge

Preferred Alternative



Site Plan - Approximate Project Limits

Preliminary Details - Preferred Alternative

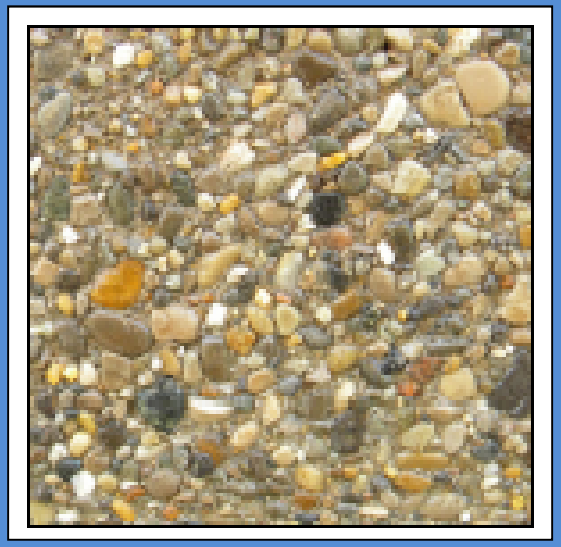


Proposed Superstructure – Cross Section

Preliminary Details - Preferred Alternative

Bridge Railing:

- Provide a concrete parapet railing with architectural treatment on faces – consider exposed aggregate finish
- Salvage existing cap-stones and reset on the new parapet railing
- Retain existing stone-faced pilasters

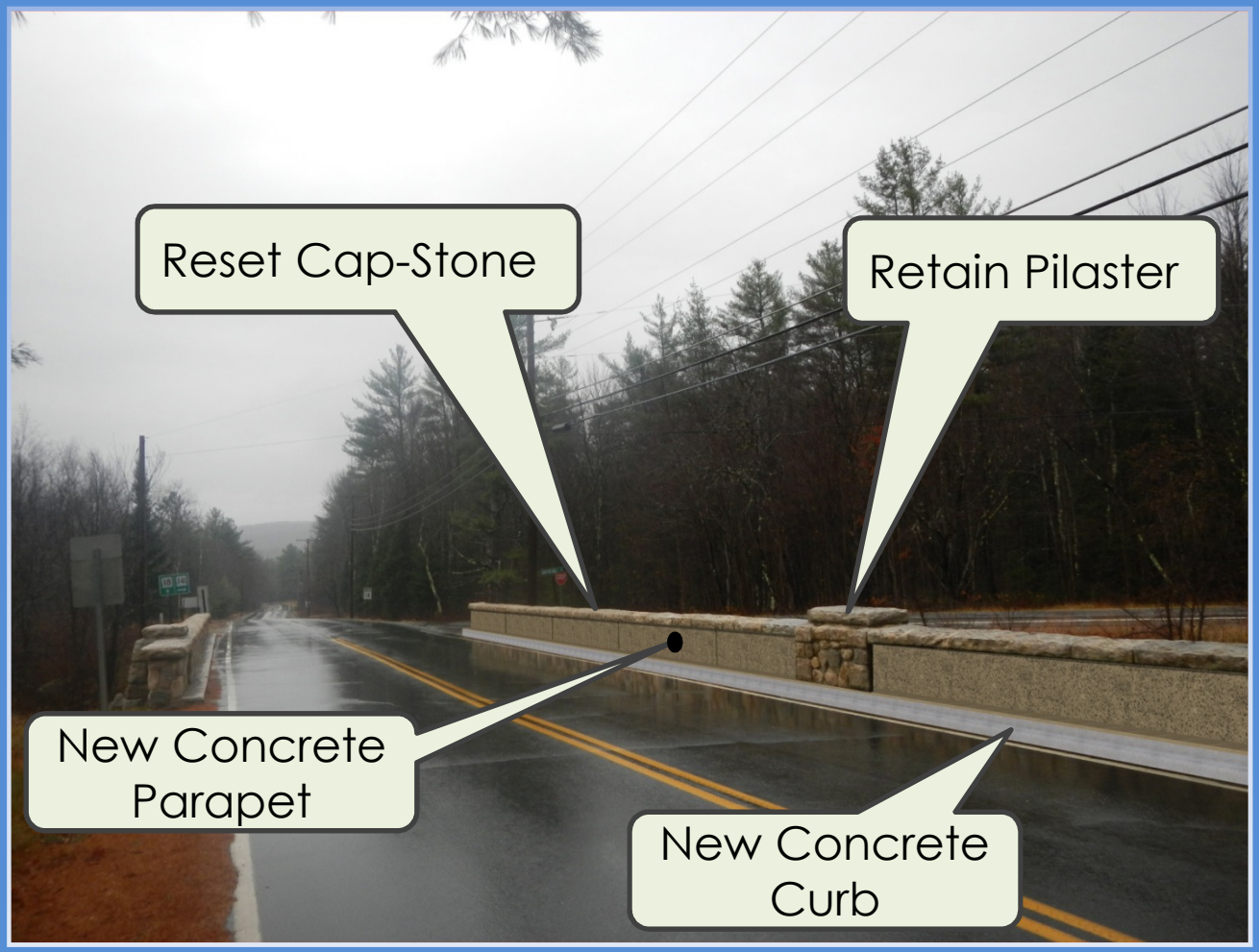


Sample Exposed Aggregate Finish

Existing Bridge – Stone Parapet Rail

NH 18 Looking North

Rendering of Preferred Alternative

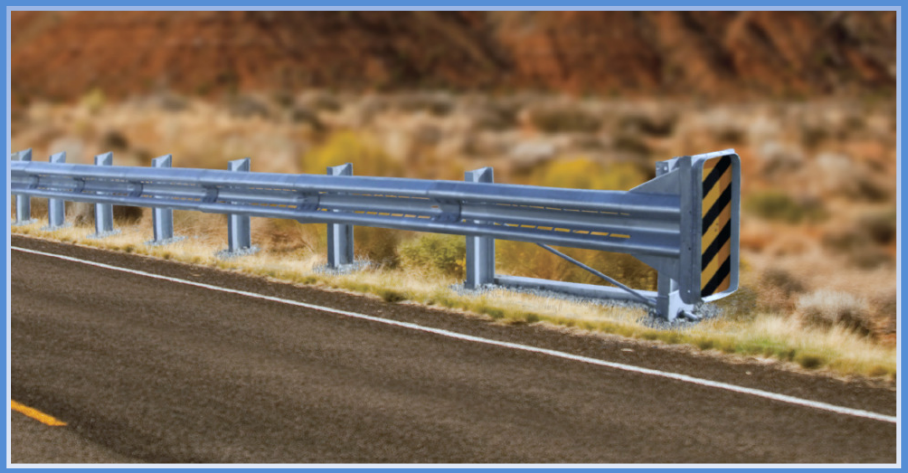


NH 18 Looking North

Bridge Approach Rail

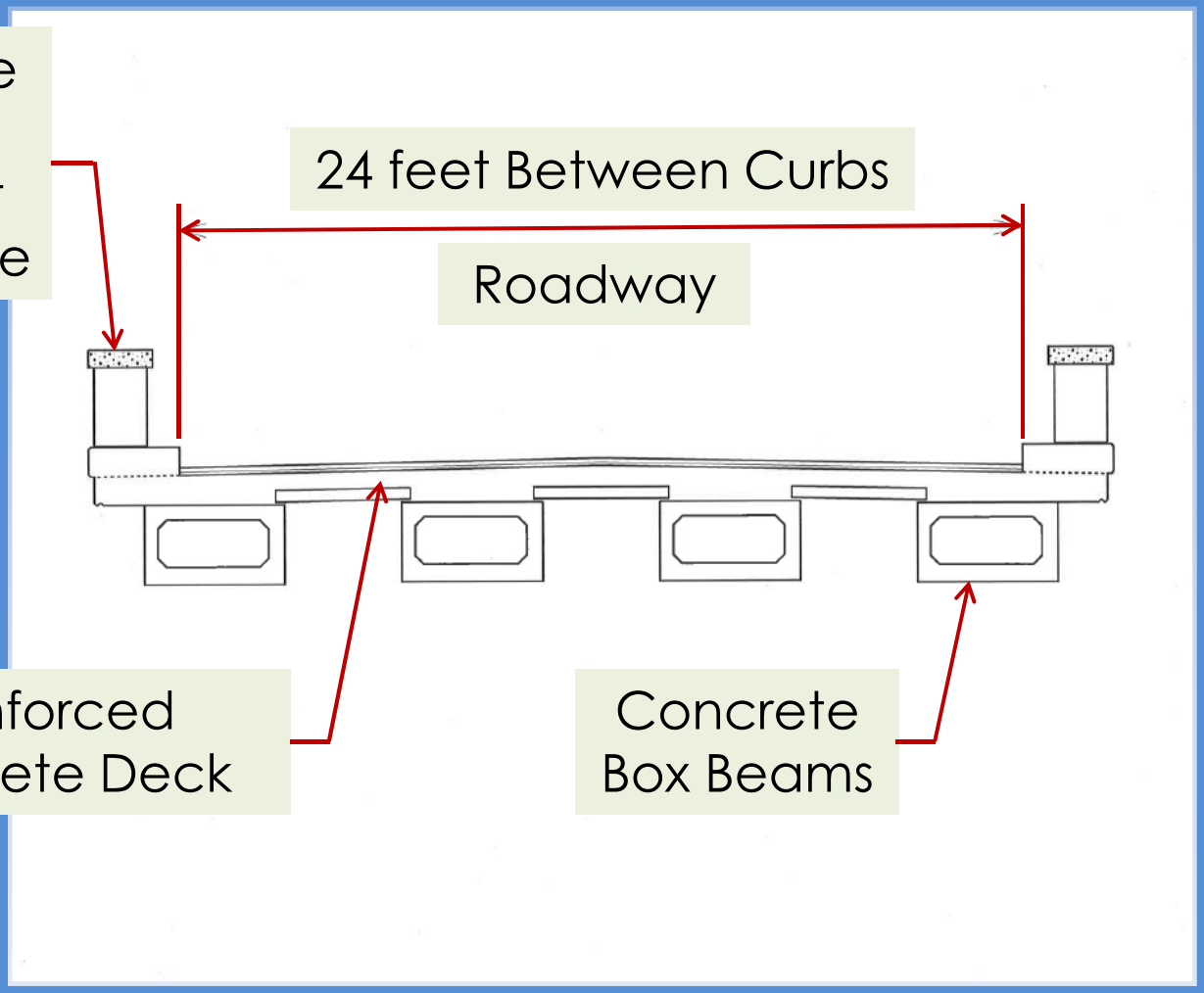
Typical Examples

Transition to Barrier or Parapet



Energy Absorbing End Unit

Preliminary Details - Preferred Alternative



Proposed Superstructure – Cross Section

Preliminary Details - Preferred Alternative

Precast Concrete Box Beams:

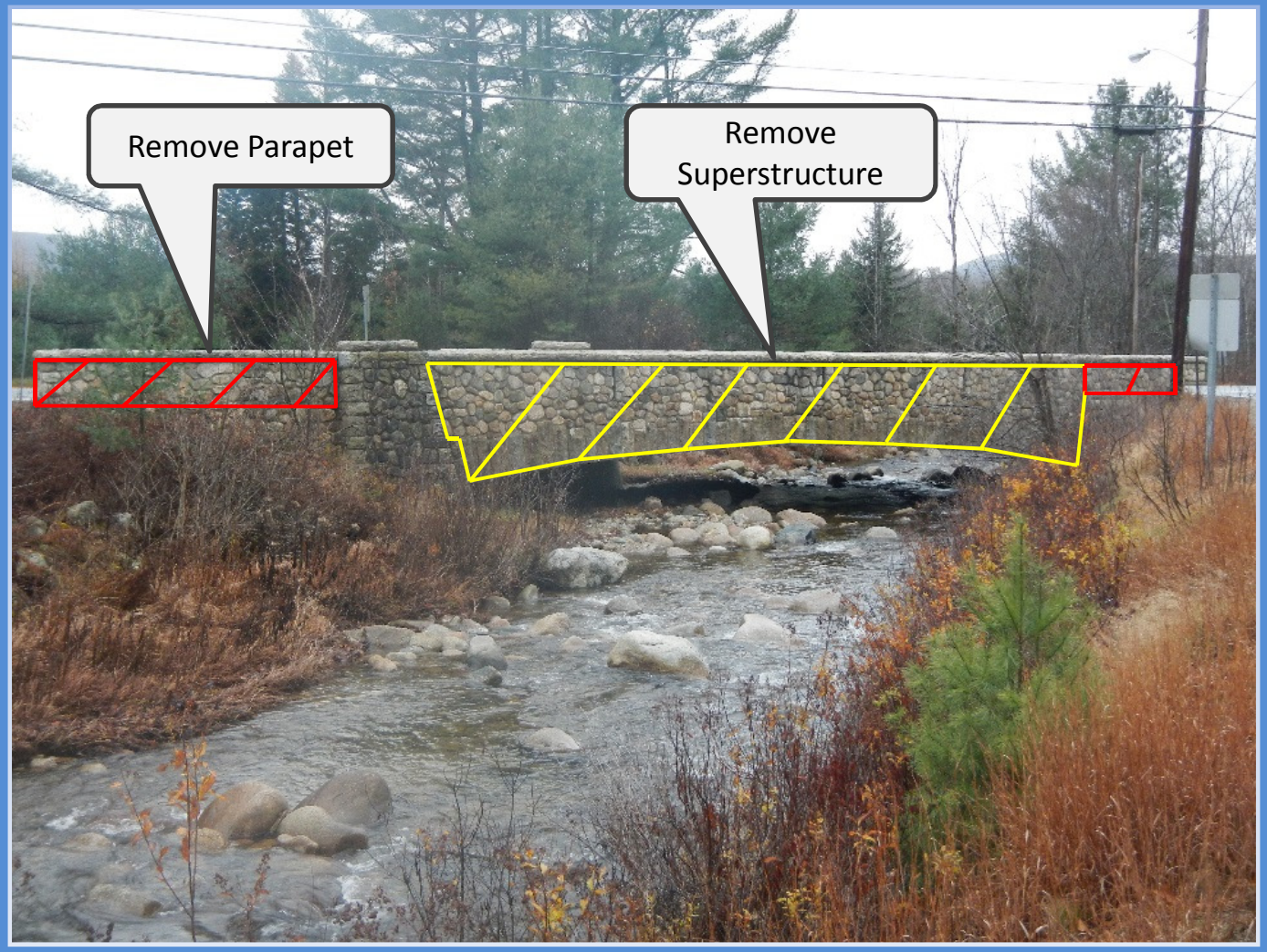
- Superstructure to consist of four precast concrete box beams and a cast-in-place concrete deck
- Consider an arch-shaped recess highlighted with a color stain to soften horizontal lines of exterior beams

Shipping Precast Box Beam

Existing Bridge - Elevation

Upstream Elevation

Proposed - Removal



Upstream Elevation

Rendering of Preferred Alternative

Upstream Elevation

Rendering of Preferred Alternative

Downstream Elevation

Traffic Control
Close Bridge – Detour Traffic

- Existing width is too narrow to maintain minimum lane widths and work within the existing bridge footprint
- Bridge will be closed during construction, which helps to control cost and expedite the work
- Proposed closure assumed to be during the school summer vacation period (Approximately 8 weeks: mid-June to mid-August) *[a closure beginning in April is preferred, see slide 42]*
- Requires coordination with Emergency Response Providers and School(s) for school vacation dates

Signed Detour

Bridge Location

3 Miles

3.5 Miles

Approximately 6.5 miles (total)

Next Steps

- Present details of Preferred Alternative to Cultural and Natural Resource Agencies to get their input and comments
- Complete NEPA process (National Environmental Policy Act) for environmental permitting
- Develop preliminary plans
- Develop contract plans and documents

Cultural Resources – Historic Properties

- Project information reported to FHWA and NHDHR for technical review and consultation, and to make a *Determination of Effect*
- If the project is found to have an *Adverse Effect* on historic properties, identify ways to minimize or mitigate the adverse effects
- Interested persons or organizations may request "*Consulting Party*" status from FHWA

  Contact Jamie Sikora, 603-401-4870 or jamie.sikora@fhwa.dot.gov

Schedule

- Contract plans completed Fall 2016
- Funding in fiscal year 2023 (current Ten-Year Plan)
- Construction starts in 2023
- Estimated construction cost for Preferred Alternative is $1.13 Million (funding is State & Federal - no Town funding)
- Could construct in 2017 if funding becomes available

Questions from NHDOT to Town of Franconia

- Where does the ambulance and fire service come from?
- Is the ambulance and fire full time or volunteer staff?
- Towns nearby that provide Mutual Aid to Franconia, can this possibly address the area affected by the bridge closure?
- Any Town events that we should be aware of?
- Is proposed closure during school summer vacation preferred? *[response from attendees was a closure beginning in April is preferred]*

Thank You

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Comments & Questions

Warren Truss c. 1900